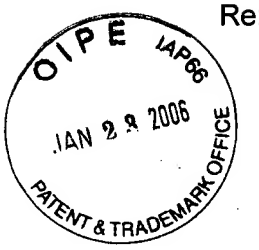

Re: U.S. Patent Application
Serial No.: 09/559,165
For: UNIVERSAL APPARATUS AND METHOD FOR INTERFACING SIGNALS WITH TELEPHONY NETWORKS
Inventor(s): Charles R. BURNETT
Your Reference: 10991753-1
Our Docket: 1673.1055

ALLOWED CLAIMS

1. A communication apparatus communicating with telephony networks, comprising:

memory storing sets of impedance control values respectively simulating a plurality of circuit impedances;

a processor configured to:

automatically detect an impedance characteristic of a telephony network to which the communication apparatus is connected;

automatically select one of said sets of impedance control values based on said detected impedance characteristic; and

combine data to be transmitted over said telephony network with said selected set of impedance control values;

a digital-to-analog converter that converts the combined data and said selected set of impedance control values into analog signals; and

an interface port connected to said telephony network that transmits the output of the digital-to-analog converter over the telephony network, wherein the impedance required by the telephony network is simulated based on the selected set of impedance control values.

2. The communication apparatus of claim 1, wherein said processor is configured to continuously transmit said selected set of impedance control values during said communication session.

4. The communication apparatus of claim 1, further comprising an input device configured to receive an input from a user, said processor configured to select said selected set of impedance control values based on said input.

5. The communication apparatus of claim 1, wherein said processor is further configured to identify, based on said detected impedance characteristic, which of said sets of impedance control values, when converted to analog signals and transmitted to said interface port, causes said interface port to simulate said impedance that substantially matches said impedance of said telephony network.

6. The communication apparatus of claim 5, wherein each of said sets of impedance control values, when converted to analog signals and transmitted to said interface port, causes said interface port to simulate a different impedance.

7. A communication apparatus communicating with telephony networks, comprising:

means for storing sets of impedance control values used for simulating a plurality of circuit impedances;

means for automatically detecting an impedance characteristic of a telephony network to which the communication apparatus is connected;

means for automatically selecting one of said sets of impedance control values based on said detected impedance characteristic;

means for combining data to be transmitted over said telephony network with said selected set of impedance control values;

means for converting said combined data and said selected set of impedance control values into analog signals; and

means for transmitting said analog signals over said telephony network, wherein the impedance required by the telephony network are simulated based on the selected set of impedance control values.

8. The communication apparatus of claim 7, wherein said transmitting means continuously transmits said selected set of impedance control values during said communication session.

10. The communication apparatus of claim 7, further comprising a means for receiving an input from a user, said selecting means configured to select said selected set of impedance control values based on said input.

11. A method for communicating with telephony networks, comprising the operations of:

providing an interface port;

interfacing said interface port with a communication connection of a telephony network;

storing sets of impedance control values used for simulating a plurality of circuit impedances;

automatically detecting an impedance characteristic of the telephony network to which the interface port is interfaced;

automatically selecting one of said sets of impedance control values based on said detected impedance characteristic;

combining data to be transmitted over said telephony network with said selected set of impedance control values;

converting said combined data and said selected set of impedance control values into analog signals;

transmitting said analog signals over the telephony network; and

simulating the impedance required by the telephony network based on the selected set of impedance control values.

13. The method of claim 11, further comprising the operations of:

receiving an input; and

performing said selecting operation based on said input.

14. The method of claim 11, further comprising the operations of:

interfacing said interface port with a communication connection of another telephony network;

automatically detecting an impedance characteristic of said other telephony network;

automatically selecting another of said sets of impedance control values based on said another detected impedance characteristic;

serially transmitting said other selected set of impedance control values to said digital-to-analog converter;

converting, at said digital-to-analog converter, said other set of impedance control values into other analog signals;

simulating another impedance at said interface port based on said other analog signals; and

performing said automatically selecting another of said sets of impedance control values operation such that said other impedance substantially matches said impedance of said other telephony network as measured from said other communication connection.

15. A method for communicating with telephony networks, comprising the operations of:

providing an interface port;

interfacing said interface port with a communication connection of a telephony network;

automatically detecting an impedance characteristic of said telephony network;

transmitting analog signals to said interface port, said analog signals having voltages;

automatically varying said voltages of said analog signals such that said interface port continuously simulates said detected impedance during a communication session in response to said analog signals; and

combining values from said selected set of impedance control values with data that is to be communicated from said interface port to a remote communication device.

17. The method of claim 15, further comprising the operations of:

storing sets of impedance control values;

automatically selecting one of said sets of impedance control values based on said detected impedance characteristic;

serially and continuously transmitting said selected set of impedance control values to a digital-to-analog converter during said communication session;

producing said analog signals at said digital-to-analog converter; and

performing said automatically varying operation based on said selected set of impedance control values.

18. The method of claim 17, further comprising the operations of:

receiving an input; and

performing said automatically selecting operation based on said input.

19. The method of claim 17, further comprising the operations of:

interfacing said interface port with a communication connection of another telephony network;

automatically detecting an impedance characteristic of said other telephony network;

transmitting other analog signals to said interface port, said other analog signals having other voltages;

automatically varying said other voltages of said other analog signals;

causing said interface port to continuously simulate a particular impedance during another communication session in response to said other analog signals;

selecting another of said sets of impedance control values based on said detected impedance characteristic of said other telephony network;

serially and continuously transmitting said other selected set of impedance control values to said digital-to-analog converter during another communications session;

producing said other analog signals at said digital-to-analog converter; and

performing said automatically varying said other voltages operation based on said other selected set of impedance control values.

20. The communication apparatus of claim 1, wherein the impedance characteristic of the telephony network to which the communication apparatus is connected comprises at least one of an AC line impedance, a network balance impedance, a DC line impedance, or a ringer impedance.

21. The communication apparatus of claim 7, wherein the impedance characteristic of the telephony network to which the communication apparatus is connected comprises at least one of an AC line impedance, a network balance impedance, a DC line impedance, or a ringer impedance.

22. The communication apparatus of claim 11, wherein the impedance characteristic of the telephony network to which the interface port is connected comprises at least one of an AC line impedance, a network balance impedance, a DC line impedance, or a ringer impedance.

23. The communication apparatus of claim 15, wherein the impedance characteristic of the telephony network comprises at least one of an AC line impedance, a network balance impedance, a DC line impedance, or a ringer impedance.